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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,155	10/01/2003	Volker Uffenkamp	10191/3386	6711
26646	7590	09/27/2004	EXAMINER	
KENYON & KENYON ONE BROADWAY NEW YORK, NY 10004			LE, JOHN H	
			ART UNIT	PAPER NUMBER
			2863	

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/676,155

Applicant(s)

UFFENKAMP ET AL.

Examiner

John H Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,8-11,14-16,22 and 28 is/are rejected.
- 7) ☒ Claim(s) 3-7,12,13,17-21 and 23-27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/01/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 10, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Daily (USP 5,559,695).

Regarding claim 1, 10, and 15, Daily discloses an image sensor system including a device for calibrating at least one image sensor system, which is located at a motor vehicle, by the use of at least one calibrating object (Col.6, lines 6-12), the image sensor system comprising: at least one calibrating object (Col.6, lines 37-44); and at least one evaluation (image processing unit) arrangement to evaluate image data of the at least one image sensor system, which generates the image data of the at least one calibrating object, and which includes a determining arrangement to determine, from generated image data of the at least one calibrating object (Col.4, lines 46-56, , Col.7, lines 15-37), an alignment of the at least one image sensor system with respect to a geometric travel axis of the motor vehicle (Col.6, lines 49-56, Col.8, line 50-Col.9, line 13); wherein a calibration is determined using a determined alignment of the at least one image sensor system with respect to the geometric travel axis of the motor vehicle (Col.9, lines 23-38).

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Regarding claims 2 and 11, Daily discloses the evaluation arrangement includes an arrangement to evaluate data concerning the geometric travel axis of the motor vehicle included in the image data (Col.7, lines 15-37).

Regarding claim 9, Stiller discloses at least one value of intrinsic calibration data of the at least one image sensor system is determined (Col.2, lines 43-53).

Regarding claim 16, Stiller discloses the generating, using the at least one image sensor system, of the image data of the at least one calibrating object, is in at least one image data set (Col.7, lines 15-37).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8, 14, 22, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daily (USP 5,559,695) in view of Burt (USP 5,473,364).

Regarding claims 8 and 14, Daily fails to disclose at least two image sensor systems which image essentially the same scene, and the alignment of each of the image sensor systems with respect to the geometric travel axis of the motor vehicle is determined separately for each of the image sensor systems, from which the alignment of the image sensor systems to each other is determined.

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Burt discloses at least two image sensor systems which image essentially the same scene, and the alignment of each of the image sensor systems with respect to the geometric travel axis of the motor vehicle is determined separately for each of the image sensor systems, from which the alignment of the image sensor systems to each other is determined (Fig.2, Col.3, lines 31-50).

Regarding claims 22 and 28, Burt discloses at least two image systems includes at least a stereo camera system (Col.5, lines 40-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include at least two image sensor systems which image essentially the same scene as taught by Burt in a device for calibrating at least one image sensor system of Daily for the purpose of providing a moving robotic vehicle carrying two spatially displaced fixed cameras aligned with the direction of travel (Burt, Abstract).

5. Claims 1-2, 8-11, 14-16, 22, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stiller (USP 6,778,928) in view of Burt (USP 5,473,364).

Regarding claims 1, 10, and 15, Stiller discloses an image sensor system including a device for calibrating at least one image sensor system, which is located at a motor vehicle, by the use of at least one calibrating object (Fig.1, Col.3, lines 45-56), the image sensor system comprising: at least one calibrating object (object 6); and at least one evaluation (analyzer 7) arrangement to evaluate image data of the at least one image sensor system, which generates the image data of the at least one calibrating object, and which includes a

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determining arrangement to determine, from generated image data of the at least one calibrating object (Col.3, line 57-Col.4, line 47).

Regarding claims 2 and 11, Stiller discloses the evaluation arrangement includes an arrangement to evaluate data concerning the geometric travel axis of the motor vehicle included in the image data (Col.4, lines 28-47).

Regarding claim 9, Stiller discloses at least one value of intrinsic calibration data of the at least one image sensor system is determined (Col.5, lines 46-48).

Regarding claim 16, Stiller discloses the generating, using the at least one image sensor system, of the image data of the at least one calibrating object, is in at least one image data set (Col.4, lines 28-47, Col.5, lines 11-48).

Stiller fails to disclose an alignment of the at least one image sensor system with respect to a geometric travel axis of the motor vehicle; wherein a calibration is determined using a determined alignment of the at least one image sensor system with respect to the geometric travel axis of the motor vehicle.

Burt discloses an alignment of the at least one image sensor system with respect to a geometric travel axis of the motor vehicle; wherein a calibration is determined using a determined alignment of the at least one image sensor system with respect to the geometric travel axis of the motor vehicle (Col.5, lines 40-52).

Regarding claims 8 and 14, Burt discloses at least two image sensor systems which image essentially the same scene, and the alignment of each of the image sensor systems with respect to the geometric travel axis of the motor

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vehicle is determined separately for each of the image sensor systems, from which the alignment of the image sensor systems to each other is determined (Fig.2, Col.3, lines 31-50).

Regarding claims 22 and 28, Burt discloses at least two image systems includes at least a stereo camera system (Col.5, lines 40-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to inform an alignment of the at least one image sensor system with respect to a geometric travel axis of the motor vehicle; wherein a calibration is determined using a determined alignment of the at least one image sensor system with respect to the geometric travel axis of the motor vehicle as taught by Burt in a device for calibrating at least one image sensor system of Stiller for the purpose of providing a moving robotic vehicle carrying two spatially displaced fixed cameras aligned with the direction of travel (Burt , Abstract).

#### ***Allowable Subject Matter***

6. Claims 3-7, 12-13, 17-21, and 23-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Contact Information***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John H Le whose telephone number is 571-272-2275. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Barlow can be reached on 571-272-2269. The fax

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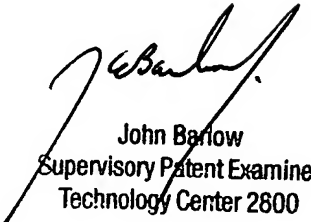
phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John H. Le

Patent Examiner-Group 2863

September 22, 2004



John Barlow  
Supervisory Patent Examiner  
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